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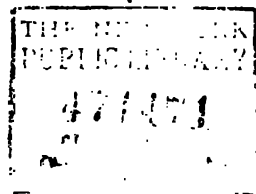
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500. SCIENCE IN GENERAL.

- HUMBOLDT, A. von. *Cosmos: a physical description of the universe.* 2 v. 1850. 500.H88
- POUCHET, F. A. *The universe; or, The infinitely great and the infinitely little.* 1882. 500.P86
Contents: Animal kingdom. Vegetable kingdom. Geology. The sidereal universe. Popular errors.
- RICHARDS, L. S. *The universe: a description of earth and development of man.* 1900. 500.R39
- SEARS, R. *Wonders of the world.* 1857..... 500.Se1
Contents: General distribution of the human family. Manners and customs. Distribution of animals. Animals. Birds. Geographical distribution of plants. Trees. High lands of the earth. Caverns and subterranean passages. Rivers. Mechanism. Principal cities. Remarkable edifices. Ruins. Antiquities.
- SOMERVILLE, Mrs. M. F. *Connection of the physical sciences.* 1834. 500.So5
- UNIVERSITY OF CHICAGO. *Investigations representing the departments: physics, chemistry, geology, mathematics. [Decennial publications of the University of Chicago. 1st series, 9. 1904.]*..... 500.C43
Contents: Velocity of light, A. A. Michelson. Geodetic curvature and the isoperimetric problem on a given surface, O. Bolza. Proof of the sufficiency of Jacobi's condition for a permanent sign of the second variation in the so-called isoperimetric problems, O. Bolza. Ternary orthogonal group in a general field, L. E. Dickson. Groups defined for a general field by the rotation groups, L. E. Dickson. Amorphous sulphur, A. Smith. New instruments of precision from the Ryerson Laboratory, R. A. Millikan. "Beckmann rearrangement," J. Stieglitz. Systematic method of calculating the dimensions of direct-current dynamo-electric machines, C. Kinsley. Equilibrium in the system composed of sodium carbonate, sodium bicarbonate, carbon dioxide, and water, H. N. McCoy. Invariants and covariants of quadratic differential quantities of n variables, H. Maschke. Subgroups of the generalized finite modular group, E. H. Moore. Contributions to the theory of glacial motion, T. C. Chamberlain.

- WESLEY, J. The wisdom of God in the creation; or, Compendium of natural philosophy. 2 v. 1816. 500.W51
- Contents:* Introduction. Part I. Man. II. Brutes. III. Plants. Metals, minerals, and other fossils. IV. Earth, water, fire, air and meteors. V. System of the world: of the heavenly bodies; and of the properties and causes of natural bodies. Abridgement of the contemplation of nature: by Mr. Bonnet. Extract of Mr. Dutens's inquiry into the origin of the discoveries attributed to the moderns.

501. PHILOSOPHY. THEORIES. UTILITY.

- BROUGHAM, H., *Lord, and others.* Discourses on the objects and uses of science and literature. 1843. 501.B79
- HUNT, R. Poetry of science; or, Studies of the physical phenomena of nature 1850. 501.H91

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- BLAIR, Rev. D. Universal preceptor: general grammar of arts, sciences, and useful knowledge. 1831. 502.B57
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- Contents:* Introduction. Internal structure of the earth. Vegetables. Animals. Birds. Insects. Reptiles. Ocean. Fishes. Atmospheres. Change of seasons and vicissitudes of day and night. Moon. Sun. Solar system.
- BOOK of knowledge for all classes: chemistry, mechanics, arts and manufactures, domestic science, origins and antiquities, sports and pastimes, curious customs, quadrupeds, birds, fishes, etc. 1849. 502.X
- BUCKE, C. Beauties, harmonies and sublimities of nature. 1841. 502.B85
- GOOD, J. M. Book of nature. 1831. 1840. 502.G59
- Contents:* Nature of the material world. Nature of the animate world. Nature of the mind
- GOODRICH, S. G. Glance at the sciences. 1852. 502.G62
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- MIVART, St. G. Introduction to the elements of science. 1894. 502.M69
- Contents:* The starting-point. Mathematics. Mechanics. Physical forces. The non-living world. The living world. Man. Logic. History. Science.
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- II. Discoveries on the site of ancient Troy: letter, B. Taylor. Lectures on the nerves, C. E. Brown-Sequard. Farewell lectures on astronomy, R. A. Proctor. Germ theory of disease, C. F. Chandler.
- III. Academy of Sciences: meeting at Washington. Assyrian relics: Collection of copies at the Smithsonian Institution. The poet Longfellow: lecture, J. T. Fields. The horse in America: Prof. O. C. Marsh's discoveries in fossils. Have we two brains, C. E. Brown-Sequard. U. S. survey of the West under Lieut. G. M. Wheeler. Effects of alcohol, W. A. Hammond. Transit of Venus: brief account of the preparations of all nations. Authorship and authenticity of books of the Old Testament, F. Adler. Heart, liver, and lungs, etymologically considered, J. H. Trumbull. Safety at sea: iron steamers that will not sink.

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Contents: Falling in love. Right and left evolution. Strictly incog. Seven-year sleepers. A fossil continent. Very old master. British and foreign. Thunderbolts. Honey-dew. Milk in the cocoanut. Food and feeding. De banana. Go to the ant. Big animals. Fossil food. Ogbury barrows. Fish out of water. First potter. Recipe for genius. Desert sands.

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Contents: Alfred Russel Wallace, E. D. Cope. Ernst Haeckel, T. B. Wakeman. Scientific method, F. E. Abbot. Herbert Spencer's Synthetic philosophy, B. F. Underwood. Evolution of chemistry, Dr. R. G. Eccles. Evolution of electric and magnetic physics, A. E. Kennelly. Evolution of botany, F. J. Wulling. Evolution of zoology, J. C. Kimball. Form and color in nature, W. Potts. Evolution of optics, L. A. W. Alleman. Evolution of art, J. A. Taylor. Evolution of architecture, J. W. Chadwick. Evolution of sculpture, T. Davidson. Evolution of painting, F. P. Rundell. Evolution of music, Z. S. Sampson. Life as a fine art, L. G. Janes. Doctrine of evolution, its scope and influence, John Fiske.

BUCKLEY, Mrs. A. B. See FISHER, Mrs. A. B. B.

DE VERE, S. Stray leaves from the book of nature. 1855. 504.D49.1
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ESTES, D., ed. Half-hour recreations in popular science. 1874. 504.Es8

Contents: Discoveries respecting the aurora, R. A. Proctor. Recent solar researches, R. A. Proctor. Cranial affinities of man and the ape, R. Virchow. Spectrum analysis explained and its uses to science illustrated, Profs. Schellen, Roscoe,

and Huggins. Spectrum analysis discoveries, Profs. Schellen, Young, Roscoe, Lockyer, Huggins, and others. Nebulae, comets, meteoric showers, Prof. H. Schellen, and others. Corals and coral islands, J. D. Dana. Unconscious action of the brain, W. B. Carpenter. Epidemic delusions, W. B. Carpenter. Scientific miscellany. Geology of the stars, A. Winchell. On yeast, T. H. Huxley. The relations between matter and force, J. H. Tice. The stone age, past and present, E. B. Tylor. Theory of nervous ether, Dr. Richardson. Toads in the hole. Origin of metalliferous deposits, T. S. Hunt. Rotundity of the earth. The phenomena of sleep, Dr. Richardson. Animal life at great depths of the sea. Russian metallurgical works. Coal as a reservoir of power, R. Hunt. Hot springs in New Zealand, H. Meade. Atoms, Prof. Clifford. The circulation of the waters on the surface of the earth, H. W. Dove. What is actinism?

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- FLINT, T. Lectures on natural history: geology, chemistry, the application of steam, and interesting discoveries in the arts. 1833. 504.F64
- HELMHOLTZ, H. von. Popular lectures on scientific subjects. Trans. by E. Atkinson. 1900. 504.H36.1
- Contents:* On the relation of natural science to science in general. On Goethe's scientific researches. On the physiological causes of harmony in music. Ice and glaciers. On the interaction of natural forces. Recent progress of the theory of vision. Eye as an optical instrument; Sensation of sight; Perception of sight. On the conservation of force. On the aim and progress of physical science.
- Same. Second series. 1901. 504.H36.2
- Contents:* Gustav Magnus. In memoriam. On the origin and significance of geometrical axioms. On the relation of optics to painting. Form, shade, colour, harmony of colour. On the origin of the planetary system. On thought in medicine. On academic freedom in German universities. Hermann von Helmholtz. Autobiographical sketch.
- HINTON, C. H. Scientific romances. 2 v. 1904. 504.H59
- V. 1. What is the fourth dimension? Persian King. Plane world. Picture of our universe. Casting out the self.
2. Education of the imagination. Many dimensions. Stella. Unfinished communications
- HUXLEY, T. H. Essays upon some controverted questions. 1892. 215.H98.3
- Contents:* Rise and progress of paleontology. Interpreters of Genesis and the interpreters of nature. Mr. Gladstone and Genesis. Note on the proper sense of the "Mosaic" narrative of the creation. Evolution of theology: an anthropological study. Science and morals. Scientific and pseudo-scientific realism. Science and pseudo-science.

Episcopal trilogy. Agnosticism. Value of witness to the miraculous. Agnosticism, a rejoinder. Agnosticism and Christianity. Lights of the church and the light of science. Keepers of the herd of swine. Illustrations of Mr. Gladstone's controversial methods. Hasisadra's adventure.

Lay sermons, addresses and reviews. 1871. 504.H98.1

Contents: On the advisableness of improving natural knowledge. Emancipation—black and white. Liberal education and where to find it. Scientific education: notes of an after-dinner speech. On the educational value of the natural history sciences. On the study of zoology. On the physical basis of life. Scientific aspects of positivism. On a piece of chalk. Geological contemporaneity and persistent types of life. Geological reform. Origin of species. Criticisms on "The origin of species." On Descartes' "Discourse touching the method of using one's reason rightly and of seeking scientific truth. Spontaneous generation.

Method and results. 1893. 504.H98.2

Contents: Autobiography. On the advisableness of improving natural knowledge. Progress of science. On the physical basis of life. On Descartes' "Discourse touching the method of using one's reason rightly and of seeking scientific truth. On the hypothesis that animals are automata, and its history. Administrative nihilism. On the natural inequality of men. Natural rights and political rights. Government: anarchy or regimentation.

Science and Christian tradition. 1894. 215.H98.2

Contents: Prologue. Scientific and pseudo-scientific realism. Science and pseudo-science. Episcopal trilogy. Value of witness to the miraculous. Possibilities and impossibilities. Agnosticism. Agnosticism, a rejoinder. Agnosticism and Christianity. Keepers of the herd of swine. Illustrations of Mr. Gladstone's controversial methods.

Science and culture. 1882. 370.4.H98.2

Contents: Science and culture. Universities, actual and ideal. Technical education. Elementary instruction in physiology. Joseph Priestly. On the method of Zadig. On the border territory between the animal and vegetable kingdoms. On certain errors respecting the structure of the heart attributed to Aristotle. On the hypothesis that animals are automata, and its history. On sensation and the unity of structure of the sensiferous organs. Evolution in biology. The coming of age of "The origin of species." Connection of the biological sciences with medicine.

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and the medical profession. Connection of the biological sciences with medicine. School boards: what they can do and what they may do. Technical education. Address on behalf of the national association for the promotion of technical education.

Science and Hebrew tradition. 1894. 215.H98.1

Contents: On the method of Zadig. Rise and progress of paleontology. Lectures on evolution. Interpreters of Genesis and the interpreters of nature. Mr. Gladstone and Genesis. Lights of the church and the light of science. Hasisadra's adventure. Evolution of theology: an anthropological study.

Teachings of Thomas Henry Huxley, by I. W. Voorhees. 1907. 504.H98.3

Contents: Part I. The man. II. His teachings: Biological. Theological. Educational. Moral. Teachings concerning the gospel of work. Concerning individual rights. Psychological teachings.

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LUBBOCK, Sir J. The beauties of nature and the wonders of the world we live in. 1892. 504.L96

Contents: Introduction. On animal life. Plant life. Woods and fields. Mountains. Water. Rivers and lakes. The sea. The starry heavens.

PROCTOR, R. A. Border land of science. 1874. 504.P94.2

Contents: The Herschels and the star depths. A voyage to the sun. Voyage to the ringed planet. A giant planet. Life in Mars. A Whewellite essay on Mars. Meteors. Star-showers. News from the moon. Earthquakes. Antarctic regions. Coal. Flying-machines. Gambling superstitions. Coincidences and superstitions. Ghosts and goblins.

Familiar science studies. 1882. 504.P94.3

Contents: Notes on infinity. Science and religion. A menacing comet. Meteoric dust. Biela's comet and meteors. Movements of Jupiter's cloud masses. The origin of the week. Problem of the great pyramid. Pyramids of Ghizeh. Sun-spots and financial panics. Cold and wet. Our winters. About lotteries. Betting on races. A gambling superstition. The fifteen puzzle. Etna. Weather forecasts. Some strangely fulfilled dreams. Suspended animation. Our astronomers royal. Photographs of a galloping horse.

Light science for leisure hours. 1871. 504.P94.4

Contents: Strange discoveries respecting the aurora. The earth a magnet. Our chief time-piece losing time. Encke, the astronomer. Venus on the sun's face. Recent solar researches. Government aid to science. American alms for British science. The secret of the North Pole. Is the Gulf Stream a myth? Floods in Switzerland. A great tidal wave. Deep-sea dredgings. The tunnel through Mont Cenis. Tornadoes. Vesuvius. Earthquake in Peru. Greatest sea-wave ever known. Usefulness of earthquakes. The forcing power of rain. A shower of snow-crystals. Long shots. Influence of marriage on

the death-rate. The topographical survey of India. A ship attacked by a sword-fish. The safety-lamp. The dust we have to breathe. Photographic ghosts. Oxford and Cambridge rowing styles. Betting on horse-races; or, The state of the odds. Squaring the circle. New theory of Achilles's shield.

Science by-ways. 1876. 504.P94.1

Contents: Life, past and present, in other worlds. The planets put in Leverrier's balance. Comet's tails. Three orders of comets. The sun a bubble. Sun's surroundings and future eclipses. The weather and the sun. Finding the way at sea. Journeys towards the North Pole. Rain. Danger from lightning. Growth and decay of mind. Have we two brains? Of some strange mental feats. Automatic chess and card-playing. Money for science.

and others. Humboldt library. 1881. 504.P94.5

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TAYLOR, G. Indications of the Creator. 1851. 504.T21

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TYNDALL, J. Fragments of science for unscientific people. 1872. 504.T97.1

Contents: The constitution of nature. Prayer and natural law. Miracles and special providences. Matter and force. Address to students. Scope and limit of scientific materialism. Scientific use of the imagination. On radiation. Radiant heat in relation to the color and chemical constitution of bodies. Chemical rays and the structure and light of the sky. Dust and disease. Life and letters of Faraday. Lecture on magnetism. *Shorter articles:* Slates. Death by lightning. Science and spirits. Vitality. Miracles.

- Fragments of science: series of detached essays, addresses, and reviews. 2 v. 1892..... 504.T97.2
- V. 1. Constitution of nature. Radiation. On radiant heat in relation to the colour and chemical constitution of bodies. New chemical reactions produced by light. Sky. Voyage to Algeria to observe the eclipse. Niagara. Parallel roads of Glen Roy. Alpine sculpture. Recent experiments on fog-signals. On the study of physics. On crsytalline and slaty cleavage. On paramagnetic and diamagnetic forces. Physical basis of solar chemistry. Elementary magnetism. On force. Contributions to molecular physics. Life and letters of Faraday. Copley medallist of 1870. Copley medallist of 1871. Death by lightning. Science and the spirits.
2. Reflections on prayer and natural law. Miracles and special providences. On prayer as a form of physical energy. Vitality. Matter and force. Scientific materialism. An address to students. Scientific use of the imagination. Belfast address. Apology for the Belfast address. Rev. James Martineau and the Belfast address. Fermentation, and its bearings on surgery and medicine. Spontaneous generation. Science and man. Professor Virchow and evolution. Electric light.
- New fragments. 1892. 824.89.T97
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- WALLACE, A. R. The wonderful century: its successes and its failures. 1898. 504.W15
- Contents:* Modes of travelling. Labor-saving machinery. Conveyance of thought. Fire and light. New applications of light. Photography. Spectrum analysis. Theoretical discoveries in physics. Minor applications of physical principles. Importance of dust. Source of beauty and essential to life. A few of the great problems of chemistry. Astronomy and cosmic theories. Geology: Glacial epoch and the antiquity of man. Evolution and natural selection. Popular discoveries in physiology. Estimate of achievements: Nineteenth century as compared with earlier centuries. Neglect of phrenology. Opposition to hypnotism and psychical research. Vaccination a delusion. Its penal enforcement a crime. Appendix: Causes of the improvement in the health of London toward the end of the eighteenth and beginning of the nineteenth centuries. Militarism: the curse of civilization. Demon of greed. Plunder of the earth. Conclusion. Remedy for want in the midst of wealth.

505. PERIODICALS.

- AMERICAN journal of science and art. Vols. 1 — date. 1819 — date. 505.Am3
- V. 50 *missing*; contains index to v. 1-49.
 Called *also* Silliman's journal.
- ANNUAL of scientific discovery. 17 v. 1850 - 1870. 505.An7
- Vols. for 1853, 1854, 1855 *missing*.

- ANNUAL record of science and industry. Vols. 2, 3, 5. 1872, 1873, 1875. 505.An71
- NATURALIST: treatises on natural history, chemistry, domestic and rural economy, manufactures and arts. v. 2. 1832. 505.N21
- POPULAR science monthly. V. 1 — date. 1872 — date. 505.P81
- Index, 1872-1882. 505.P81
- Some volumes were entitled Appleton's popular science monthly.
- POPULAR science monthly supplement. 4 v. 1877 — 8. 505.P81.2
- SCIENTIFIC tracts designed for instruction and entertainment, and adapted to schools, lyceums and families. J. Holbrook, and others. 3 v. in 5. 1831 — 3. 505.Sci2.1
- Same: new series. Dr. J. V. C. Smith. v. 2 — 3. 1834 — 5. 505.Sci2.2
- SILLIMAN's journal, *see* American journal of science and art.

506. SOCIETIES.

- AMERICAN Academy of Arts and Sciences. Memoirs. 1833. 506.Am3
- AMERICAN Institute of New York. Report. 1870 — 1. 1871. 506.Am31
- GOODE, G. B., *ed.* The Smithsonian Institution, 1846 — 1896: history of the first half century. 1897. 506.G61.2
- Smithsonian Institution: its origin, history, objects, and achievements. 1895. 506.G61.1
- NATIONAL Academy of Sciences. Memoirs. V. 2, 3, 6, 7. 1884 — 1895. 506.N21
- RHEES, W. J., *comp.* Smithsonian Institution: documents relative to its origin and history, 1835 — 1899. 2 v. 1901. 506.R34
- SMITHSONIAN Institution. Annual report of the Board of Regents. 1853 — date. 506.Sm6.2
- Note:* The report for 1853 contains the reports for 1847-1882.
For contents of reports to 1880 *see* Catalogue of Smithsonian publications, 1882, 506.Sm6.1.
For 1881-4 *see* Bangor Public Library Catalogue, 1887.
 Later reports *see* the volumes.
- CATALOGUE of publications of the Smithsonian Institution, 1846-1882: with an alphabetical index of articles in the Contributions to knowledge; Miscellaneous collections; Annual reports; Bulletins and proceedings of the United States National Museum, and Reports of the Bureau of Ethnology, by W. J. Rhees 1882. 506.Sm6.1
- Contributions to knowledge. V. 1 — date. 1848 — date. 506.Sm6.3
- V. 1. Squier, E. G., and Davis, C. H. Ancient monuments—Mississippi Valley.
2. Walker, S. C. Researches relative to Neptune.
 Lieber, F. Vocal sounds of Laura Bridgman.
 Bailey, J. W. Microscopical soundings off Atlantic coast.
 Ellett, C. Physical geography of the Mississippi valley.
 Gibbs, R. W. Mosasaurus and three allied genera.

- Agassiz, L. Classification of insects from embryological data.
- Hare, R. Explosiveness of nitre.
- Bailey, J. W. Microscopical observations in South Carolina, Georgia, Florida.
- Squier, E. G. Aboriginal monuments of the state of New York.
- Walker, S. S. Ephemeris of Neptune, 1848, 1849, 1850, 1851.
- Downes, J. Occultations visible in the United States in 1851.
3. Locke, J. Terrestrial magnetism.
 - Secchi, A. Electrical rheometry.
 - Gerard, C. Monograph of the cottoids.
 - Harvey, W. H. Marine algæ of North America. Part I.
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- Contents:* 1867-9. Nebraska. Wyoming. Colorado and New Mexico. With reports on the mines and minerals of Colorado, by P. Frazer, and agriculture, by C. Thomas.
1870. Wyoming and portions of contiguous territories.
1871. Montana and portions of adjacent territories.
1872. Montana. Idaho. Wyoming and Utah.
1873. Colorado.
1874. Colorado and parts of adjacent territories.
1875. Colorado and parts of adjacent territories. Part I. Geology. II. Geography and topography. III. Zoology: history of the American bison. Report on the Rocky Mountain locust and other injurious insects.
1876. Colorado, *etc.* Part I. Geology. II. Topography. III. Archaeology and ethnology. IV. Palæontology and zoology.
1877. Idaho and Wyoming. Part I. Geology and palæontology. II. Topography.
1878. Wyoming and Idaho. 2 v. Part I. Geology. palæontology, and zoology. II. Yellowstone National park. Geology, thermal springs, topography. Maps.
- Bulletins. Nos. 3-6. 1877-1881. 557.3.H32.3
- Zoology and palæontology.
- Miscellaneous publications. Nos. 1. 3. 7. 8. 11. 12. 1874-80. 557.3.H32.2
- No. I. List of elevations, principally west of the Mississippi. Collated and arranged, by H. Gannett.
- III. Birds of the north-west, E. Coues.
- VII. Ethnography and philology of the Hidatsa Indians, W. Matthews.
- VIII. Fur-bearing animals: North American mustelidæ, E. Coues.
- XI. Birds of the Colorado valley, E. Coues.
- XII. North American pinnipeds, J. A. Allen.
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- V. 1. Systematic geology, C. King.
2. Descriptive geology, A. Hague and S. F. Emmons.
3. *Missing*.
4. Palæontology, F. B. Meek. Palæontology, J. Hall and R. P. Whitfield. Ornithology, R. Ridgway.
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- V. 2. Report of director. Administrative reports. Physical geography of the Grand Canon district, C. E. Dutton. History of Lake Bonneville, G. K. Gilbert. Geology and mining industry of Leadville, Lake County, Colorado, S. F. Emmons. Geology of the Comstock Lode and the Washoe district, with atlas, G. F. Becker. Production of the precious metals in the United States, C. King. New method of measuring heights by means of the barometer, G. K. Gilbert.
3. Report of director. Administrative reports. Birds with teeth, O. C. Marsh. Copper-bearing rocks of Lake Superior, R. D. Irving. Lake Lahontan, I. C. Russell. Geology of the Eureka district, Nevada, A. Hague. Terminal moraine of the second glacial epoch, T. C. Chamberlain. Non-marine fossil mollusca of North America, C. A. White.
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6. Report of the director. Administrative reports. Mount Taylor and the Zuni plateau, C. E. Dutton. Preliminary papers on the driftless area of the Upper Mississippi valley, T. C. Chamberlain and R. D. Salisbury. Quarantine determination of silver by means of the microscope, J. S. Curtis. Sea coast swamps of the eastern United States, N. S. Shaler. Synopsis of the flora of the Loraine group, L. F. Ward.
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8. Pt. I. Report of the director. Administrative reports. Quaternary history of Mono Valley, California, I. C. Russell. Geology of the Lassen Peak district, J. S. Diller. Fossil butterflies of Florissant, S. H. Scudder.
 II. Trenton limestone as a source of petroleum and in flammable gas in Ohio and Indiana, E. Orton. Geology of the quicksilver deposits of the Pacific slope, G. F. Becker. Geology of Mount Desert Island, Maine, N. S. Shaler.
9. Report of the director. Administrative reports. Charleston earthquake, Aug. 31, 1886, C. E. Dutton. Geology of Cape Ann, Mass., N. S. Shaler. Formation of travertine and siliceous sinter by the vegetation of hot springs, W. H. Weed. Geology and physiography of a portion of north-

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10. Pt. I. Geology. Report of the director. Administrative reports. General account of the fresh-water morasses of the United States, with a description of the Dismal Swamp district of Virginia and North Carolina, N. S. Shaler. Penokee iron-bearing series of Michigan and Wisconsin, R. D. Irving and C. R. Van Hise. Fauna of the lower Cambrian or Olenellus Zone, C. D. Walcott.
II. Irrigation.
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 12. Pt. I. Report of the director. Administrative reports. Origin and nature of soils, N. S. Shaler. The Lafayette formation, W. J. McGee. The North American continent during Cambrian time, C. D. Walcott. Eruptive rocks of Electric Peak and Sepulchre Mountain, Yellowstone National Park, J. P. Iddings.
II. Irrigation: Report upon the location and survey of reservoir sites during the year ending June 30, 1891, A. H. Thompson. Irrigation in India, H. M. Wilson.
 13. Pt. I. Report of the director. Administrative reports.
II. Geology: Second expedition to Mount St. Elias, I. C. Russell. Geological history of harbors, N. S. Shaler. The mechanics of Appalachian structure, B. Willis. The average elevation of the United States, H. Gannett. Rensselaer grit plateau of New York, T. N. Page. The American tertiary aphidæ, S. H. Scudder.
III. Irrigation: Water supply for irrigation, F. H. Newell. American irrigation engineering, H. M. Wilson. Engineering results of irrigation, H. M. Wilson. Construction of topographic maps and the selection and survey of reservoir sites in the hydrographic basin of the Arkansas River, Colorado, A. H. Thompson. Location and survey of reservoir sites during the fiscal year, 1892, A. H. Thompson.
 14. Pt. I. Report of the director. Administrative reports.
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 15. Report of the director. Administrative reports. Geology of the common roads of the United States, N. S. Shaler. Potomac formation, L. F. Ward. Geology of the San Francisco peninsula, A. C. Lawson. Preliminary report on the Marquette iron-bearing district of Michigan, C. R. Van Hise and W. S. Bayley, with a chapter on the Republic

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16. C. D. Walcott, *Director*, 1894-1900.
- I. Report of the director. The dinosaurs of North America, O. C. Marsh. Glacier Bay and its glaciers, H. H. F. Reid. Some analogies in the lower cretaceous of Europe and America, L. F. Ward. Structural details in the Green Mountain region and in eastern New York, T. N. Dale. Principles of pre-Cambrian North American geology, C. R. Van Hise. Flow and fracture of rocks as related to structure, L. M. Hoskins. Summary of primary triangulation executed between the years 1882 and 1894, H. Gannett.
- II. Papers of an economic character; Geology and mining industries of the Cripple Creek district, Colorado, W. Cross and R. A. F. Penrose, jr. Mining geology of the district, R. A. F. Penrose, jr. A geological reconnaissance across Idaho, G. H. Eldridge. Geology of the road-building stones of Massachusetts, with some consideration of similar materials from other parts of the United States, N. S. Shaler. Economic geology of the Mercur mining district, Utah, J. E. Spurr, with introduction by S. F. Emmons. Public lands and their water supply, F. H. Newell. Water resources of a portion of the great plains, R. Hay.
- III. Mineral resources of the United States, 1894, metallic products. Production of iron ores in various parts of the world, J. Birkinbine. Iron and steel and allied industries in all countries, J. M. Swank. Reconnaissance of the gold fields of the southern Appalachians, G. F. Becker. Copper, C. Kirchhoff. Lead, C. Kirchhoff. Zinc, C. Kirchhoff. Manganese, J. D. Weeks. Production of tin, C. M. Rolker. Aluminum, R. L. Packard. Bauxite, C. W. Hayes. Quick-silver, Nickel, Chromium, Tungsten, Antimony, E. W. Parker. Platinum.
- IV. Mineral resources of the United States, 1894, non-metallic products: Production of coal, E. W. Parker. Manufacture of coke, J. D. Weeks. Origin, distribution, and commercial value of peat deposits, N. S. Shaler. Petroleum, J. D. Weeks. Natural gas, J. D. Weeks. Asphaltum, E. W. Parker. Stone, W. C. Day. Soapstone, E. W. Parker. Magnesite, C. G. Yale. Clay, J. Middleton. Technology of the clay industry, H. Ries. Cement. Abrasive materials, E. W. Parker. Precious stones, G. F. Kunz. Fertilizers. Commercial development of the Tennessee phosphates, C. G. Memminger. Sulphur and pyrites, E. W. Parker. Salt, E. W. Parker. Fluor-spar. Mica. Gypsum, E. W. Parker. Monazite, H. B. C. Nitze. Mineral paints, E. W. Parker. Barytes, E. W. Parker. Asbestos, E. W. Parker. Mineral waters, A. C. Peale.
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- III. V. 1. Mineral resources of the United States, 1895, metallic products and coal.
- V. 2. Non-metallic products, except coal.
18. Pt. I. Director's report, including triangulation and spirit leveling.
- II. Triassic formation of Connecticut, W. M. Davis. Geology of the Edwards Plateau and Rio Grande Plain adjacent to Austin and San Antonio, Texas, R. T. Hill and T. W. Vaughan. Table of North American tertiary horizons, correlated with one another and with those of western Europe, with annotations, W. H. Dall. Glaciers of Mount Rainier, I. C. Russell; with The Rocks of Mount Rainier, G. O. Smith. Age of the Franklin white limestone of Sussex County, New Jersey, J. E. Wolff and A. H. Brooks. Geological sketch of San Clemente Island, W. S. T. Smith. Geology of the Cape Cod district, N. S. Shaler. Recent earth movement in the Great Lake region, G. K. Gilbert.
- III. Economic geology. Reconnaissance of the gold fields of southern Alaska, with some notes on general geology, G. F. Becker. Geology of the Yukon gold district, Alaska, J. E. Spurr; with an introductory chapter on the history and present condition of the district, H. B. Goodrich. Some coal fields of Puget Sound, B. Willis. Geology and mineral resources of the Judith Mountains of Montana, W. H. Weed and L. V. Pirsson. Mining districts of the Idaho Basin and the Boise Range, Idaho, W. Lindgren, with a report on the fossil plants of the Payette formation, F. H. Knowlton. Preliminary report on the mining industries of the Telluride quadrangle, Colorado, C. W. Purington.
- IV. Hydrography: Progress of stream measurements for the calendar year 1896, A. P. Davis. Water resources of Indiana and Ohio, F. Leverett. New developments in well boring and irrigation in South Dakota, N. H. Darton. Water storage and construction of dams, J. D. Schuyler.
19. Pt. I. Director's report, including triangulation and spirit leveling.
- II. Physiography of the Chattanooga district, in Tennessee, C. W. Hayes. Principles and conditions of the movements of ground water, F. H. King. Theoretical investigation of the motion of ground waters, C. S. Slichter. Geology of the Richmond Basin, Virginia, N. S. Shaler and J. B. Woodworth. Cretaceous formation of the Black Hills as indicated by the fossil plants, L. F. Ward, and others.
- III. Economic geology: Crystal Falls iron-bearing district of Michigan, J. M. Clements and H. L. Smyth with a chapter on the Sturgeon River Tongue, W. S. Bayley, and introduction by C. R. Van Hise. Slate belt of eastern New York and western Vermont, T. N. Dale. Coos Bay gold-field, Oregon, J. S. Diller. Titaniferous iron ores of the

Adirondacks, J. F. Kemp. Geology of the McAlester-Lehigh coal-field, Indian Territory, J. A. Taff; with report on fossil plants from that field, D. White, and report on Paleozoic invertebrate fossils from that region, G. H. Girty. Geology and mining industry of the Tintic district, Utah, G. W. Tower, jr., and G. O. Smith.

IV. Hydrography: Progress of stream measurements for the calendar year 1897, F. H. Newell and others. Rock waters of Ohio, E. Orton. Preliminary report on the geology and water resources of Nebraska west of the 103d meridian, N. H. Darton.

V. V. 1. Forest reserves: Forests of the United States, H. Gannett. Black Hills forest reserve, H. S. Graves. Bighorn, F. E. Town. Teton, T. S. Brandegree. Yellowstone Park, southern part, T. S. Brandegree. Priest River, J. B. Leiber. Bitterroot, J. B. Leiber. Washington, H. B. Ayres. Eastern part of Washington, M. W. Gorman. San Jacinto, J. B. Leiber. San Bernardino, J. B. Leiber. San Gabriel, J. B. Leiber. Forest conditions of northern Idaho, J. B. Leiber. Pine Ridge timber, Nebraska, N. H. Darton.

V. V. 2. Maps.

VI. V. 1. Mineral resources of the United States, 1897, metallic products, coal and coke.

V. 2. Mineral resources of the United States, 1897, non-metallic products except coal and coke.

20. Pt. I. Director's report, including triangulation and spirit leveling.

II. Brief memorandum on the geology of the Phillipine Islands, G. F. Becker. Study of Bird Mountain, Vermont, T. N. Dale. Devonian fossils from southwestern Colorado: the fauna of the Ouray formation, G. H. Girty. Preliminary paper on the geology of the Cascade Mountains in northern Washington, I. C. Russell. Status of the Mesozoic floras of the United States, L. F. Ward. Stratigraphic succession of the fossil floras of the Pottsville formation in the southern anthracite coal field, Pennsylvania, D. White.

III. Precious metal mining districts: Bohemia mining region of western Oregon, with notes on the Blue River mining region and on the structure and age of the Cascade Range, J. S. Diller; with report on the fossil plants associated with the lavas of the Cascade Range, F. H. Knowlton. Gold and silver veins of Silver City, De Lamar, and other mining districts in Idaho, W. Lindgren. Geology of the Little Belt Mountains, Montana, with notes on the mineral deposits of the Neihart, Barker, Yogo, and other districts, W. H. Weed; accompanied by a report on the petrography of the igneous rocks of the district, L. V. Pirsson.

IV. Hydrography: Progress of stream measurements for 1898, F. H. Newell. Hydrography of Nicaragua, A. P. Davis.

V. V. 1. Forest reserves: Forest of the United States, H. Gannett. Pikes Peak, Plum Creek, and South Platte, J. G. Jack. White River plateau timber land, G. B. Sudworth. Battlement Mesa, G. B. Sudworth. Flathead, H. B. Ayres. Bitterroot, J. B. Leiber. San Gabriel, J. B. Leiber. San Bernardino, J. B. Leiber. San Jacinto, J. B. Leiber.

V. V. 2. Maps.

VI. V. 1. Mineral resources of the United States, 1898, metallic products, coal, and coke.

VI. V. 2. Mineral resources of the United States, 1898, non-metallic products except coal and coke.

VII. Explorations in Alaska in 1898. Reconnaissance in the Sushitna Basin and adjacent territory, Alaska, G. H. Eldridge. Reconnaissance in southwestern Alaska, J. E. Spurr. Reconnaissance from Resurrection Bay to the Tanana River, W. C. Mendenhall. Reconnaissance of a part of Prince William Sound and the Copper River district, F. C. Schrader. Reconnaissance in the White and Tanana river basins, A. H. Brooks.

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- V. 1. On hypersthene-andesite and on triclinic pyroxene in augitic rocks, W. Cross; with a geological sketch of Buffalo Peaks, Colorado, S. F. Emmons. Gold and silver conversion tables, A. Williams, jr. Fossil faunas of the upper Devonian, from Tompkins County, N. Y. to Bradford County, Pa., H. S. Williams. Mesozoic fossils, Dr. C. A. White. Dictionary of altitudes in the United States, H. Gannett. Elevations in the Dominion of Canada, J. W. Spencer.
7. Work done in the division of chemistry and physics, 1885-6, F. W. Clarke. Tertiary and cretaceous strata of the Tuscaloosa, Tombigbee, and Alabama rivers, E. A. Smith and L. C. Johnson. Bibliography of the North American geology for 1886, N. H. Darton. Present condition of knowledge of the geology of Texas, R. T. Hill. Nature and origin of deposits of phosphate of lime, R. A. F. Penrose, jr.
8. Analyses of waters of the Yellowstone National Park, F. A. Gooch and J. E. Whitfield. Form and position of the sea level, R. S. Woodward. Latitudes and longitudes of certain points in Missouri, Kansas, and New Mexico, R. S. Woodward. Formulas and tables to facilitate the construction and use of maps, R. S. Woodward. On invertebrate fossils from the Pacific Coast, C. A. White. Subaerial decay of rocks and origin of the red color of certain formations, I. C. Russell. Geology of Nantucket, N. S. Shaler. Report on the thermo-electrical measurement of high temperatures, C. Barus.
10. Greenstone schist areas of the Menominee and Marquette regions of Michigan, G. H. Williams. Bibliography of Paleozoic crustacea, 1698-1889, A. W. Vogdes. Work done in the division of chemistry and physics, 1888-89, F. W. Clarke. Stratigraphy of the bituminous coal field of Pennsylvania, Ohio and West Virginia, I. C. White.
11. Group of volcanic rocks from the Tewan Mountains, New Mexico, and on the occurrence of primary quartz in certain basalts, J. P. Iddings. Relations of the traps of the Newark system in the New Jersey region, N. H. Darton. Earthquakes in California, 1889, J. E. Keeler. Classified and annotated bibliography of fossil insects, S. H. Scudder. Astronomical work, 1889-1890, R. S. Woodward. Index to the known fossil insects of the world, including Myriapods and Arachnids, S. H. Scudder.
12. Altitudes between Lake Superior and the Rocky Mountains, W. Upham. The viscosity of solids, C. Barus. Minerals of North Carolina, F. A. Genth. Record of North American geology, 1887-1889, N. H. Darton.
14. Correlation papers—Cambrian, C. D. Walcott; Cretaceous, C. A. White; Eocene, W. B. Clark.
15. Correlation papers—Neocene, W. H. Dall and G. D. Harris; Newark system, I. C. Russell; Archean and Algonkian, C. R. Van Hise.

18. Catalogue and bibliography of North American Mesozoic invertebrata, C. B. Boyle. High temperature work in igneous fusion and ebullition, chiefly in relation to pressure, C. Barus. Glaciation of the Yellowstone Valley north of the Park, W. H. Weed. Laramie and the overlying Livingston formation in Montana, W. H. Weed; with report on flora, F. H. Knowlton. The Colorado formation and its invertebrate fauna, T. W. Stanton.

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- V. 1. Folio 1-16. Livingstone, Montana. Ringgold, Georgia; Tennessee. Placerville, California. Kingston, Tennessee. Sacramento, California. Chattanooga, Tennessee. Pike's Peak, Colorado. Sewanee, Tennessee. Anthracite crested Butte, Colorado. Harper's Ferry, Virginia; Maryland. Jackson, California. Estillville, Kentucky; Virginia; Tennessee. Fredericksburg, Virginia, Maryland. Staunton, Virginia; West Virginia. Lassen Peak, California. Knoxville, Tennessee; North Carolina.
2. Folio 17-32. Marysville, California. Smartsville, California. Stevenson, Alabama; Georgia; Tennessee. Cleveland, Tennessee. Pikesville, Tennessee. McMinnville, Tennessee. Nomini, Maryland. Three Forks, Montana. Loudon, Tennessee. Pocahontas, Virginia; West Virginia. Morristown, Tennessee. Piedmont, West Virginia; Maryland. Nevada City, California [*special folio*]. Yellowstone National Park, Wyoming. Pyramid Peak, California. Franklin, West Virginia; Virginia.
3. Folio 33-48. Briceville, Tennessee. Buckhannon, West Virginia. Gadsen, Alabama. Pueblo, Colorado. Downieville, California. Butte, Montana [*special folio*]. Truckee, California. Wartburg, Tennessee. Sonora, California. Nueces, Texas. Bidwell Bar, California. Tazewell, Virginia; West Virginia. Boise, Idaho. Richmond, Kentucky. London, Kentucky. Tenmile District, Colorado [*special folio*].
4. Folio 49-64. Roseburg, Oregon. Holyoke, Massachusetts; Connecticut. Big Trees, California. Absaroka, Wyoming. Standingstone, Tennessee. Tacoma, Washington. Fort Benton, Montana. Little Belt Mountains, Montana. Telluride, Colorado. Elmore, Colorado. Bristol, Virginia; Tennessee. La Plata, Colorado. Monterey, Virginia; West Virginia. Menominee, Michigan [*special folio*]. Mother Lode District, California. Uvalde, Texas.
5. Folio 65-80. Tintic, Utah [*special folio*]. Colfax, California. Danville, Illinois; Indiana. Walsenburg, Colorado. Huntington, West Virginia; Ohio. Washington, D. C.; Maryland; Virginia. Spanish Peaks, Colorado. Charleston, West Virginia. Coos Bay, Oregon. Coalgate, Indian Territory. Maynardville, Tennessee. Austin, Texas. Raleigh, West Virginia. Rome, Georgia; Alabama. Atoka, Indian Territory. Norfolk, Virginia; North Carolina.
6. Folio 81-96. Chicago, Illinois; Indiana. Masontown—Uniontown, Pennsylvania. New York City, New York; New Jersey. Ditney, Indiana. Oelrichs, South Dakota; Nebraska. Ellensburg, Washington. Camp Clarke, Nebraska. Scotts Bluff, Nebraska. Fort Orford, Oregon. Cranberry, North Carolina; Tennessee. Hartville, Wyoming. Gaines, Pennsylvania; New York. Elkland.

- Tioga, Pennsylvania. Brownsville-Connellsville, Pennsylvania. Columbia, Tennessee. Olivet, South Dakota.
7. Folio 97-112. Parker, South Dakota. Tishomingo, Indian Territory. Mitchell, South Dakota. Alexandria, South Dakota. San Luis, California. Indian, Pennsylvania. Nampa, Idaho; Oregon. Silver City, Idaho. Patoka, Indiana; Illinois. Mount Stuart, Washington. Newcastle, Wyoming; South Dakota. Edgemont, South Dakota; Nebraska. Cottonwood Falls, Kansas. Latrobe, Pennsylvania. Globe, Arizona. Bisbee, Arizona.
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5. Hamamelideæ—Sapotaceæ, [azalea dogwood, laurel, rhododendron, witch hazel, etc.]
6. Ebenaceæ—Polygonaceæ, [ash, catalpa, persimmon, etc.]
7. Lauraceæ—Juglandaceæ, [elm, walnut, hickory, etc.]
8. Cupuliferae, [oak.]
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